

3.0 HAZARD IDENTIFICATION, VULNERABILITY, RISK

3.1 Teton County Wildfire: Fuel, Weather, Topography, and Wildland/Urban Interface (WUI)

Teton County has been the site of several wildfires since 1910. The fuels, weather and topography in Teton County combine to make wildfire a periodic hazard with associated risks. Recent large fires that have impacted Teton County and its residents include intense fires of over 100 acres, including: The Mosquito Fire in 2001, the River Fire in 2002, and numerous smaller fires scattered throughout the County (Appendix A, Map 3, Fire Starts).

Multiple wildfires have occurred in Teton County every decade since 1910. Landscape scars from past intense large wildfires are obvious in much of the County. Large areas of timbered areas are beyond the natural fire cycle yielding an accumulation of fuels that will increase fire intensity and make suppression difficult when a fire escapes initial attack.

The large wildfires in Teton County generally burn in a west to east pattern, but a southwest to northwest pattern has also occurred with some regularity. Though lightning historically ignites the highest percentage of the wildfires in Teton County, human ignition is also the cause of some recent wildfires in the county.

Large wildfires in Teton County have impacted most residents, reduced visitation, degraded air quality, increased soil erosion, and resulted in watershed contamination. Mitigation of soil erosion and vegetation rehabilitation after wildfires in Teton County has been required, adding expense to County, State and Federal agencies.

3.2 Wildfire Fuels and Risk in Teton County

Fuels that contribute to wildfires in Teton County range from grasses and brush on CRP lands, cured grain on cultivated lands, to sagebrush/grass on lower slopes with transition to aspen, spruce/fir or lodgepole pine evident at higher elevations of the valley. The CRP, sagebrush/grass and spruce/fir or lodgepole vegetation represents the major fire regimes or fire hazard areas of the county.

Changes in the vegetation within Teton County continue to occur, with these changes being most obvious in the spruce/fir/lodgepole pine dominated areas. Fire exclusion and lack of mechanical treatment (thinning) have resulted in dense stands of spruce/fir in many areas, with Douglas or subalpine fir on north aspects. These small, densely packed trees provide available fuel for wildfire spread and increased intensity. Drought, combined with these dense stands, has increased tree mortality from insects through the 1990s and into this decade, providing additional dead vegetation to fuel future wildfires. The condition of this vegetation, county vulnerability, and watershed protection provide the basis for identifying hazards and assigning risks.

The Teton County Wildfire Group has addressed four fire condition classes in relation to vegetation conditions and threat to life and property: Low Risk, Moderate Risk, High Risk, and Extreme Risk (Appendix A, Map 4, Wildland Fire Hazard Rating).

Low Risk: Areas or watersheds have vegetation in a condition that will pose little risk of a large fire, but will need to stay in the current condition through maintenance such as continued cultivation, or use of prescribed fire, mechanical or biological treatments. *An example of low risk would be an open stand of conifer (no thickets of saplings), aspen stands, or an area that was recently treated with prescribed fire.*

Moderate Risk: Areas and watersheds with excessive accumulation of understory fuel build-ups that, if ignited, will result in a more intense wildfire, would be difficult to suppress, could spread to adjacent lands, and could have a negative impact on watersheds and soil quality, and pose a moderate threat to property. *An example of a moderate risk is mixed conifer stands with numerous saplings and openings with thickets of small trees, or sagebrush with grasses as the major species.*

High Risk: Areas and watersheds with excessive dead or dying vegetation with large quantities of small densely packed trees amongst large trees. A wildfire ignited in the high risk areas will be very difficult to suppress, can yield a fire of high intensity that can damage all the vegetation, and lead to soil erosion and water quality degradation. *An example of high risk is mixed conifer with dense thickets of understory trees that can carry the fire up into the larger trees. The described tree thickets are very moisture-dependent and drought prone.*

Extreme Risk: Areas within Teton County that combine high risk wildfire fuel attributes, increased slopes, ingress/egress constraints with homes and buildings developed or interspersed within these wildfire fuels (Appendix A, Map 5, Urban Development in High and Extreme Areas).

The dynamics of biomass growth, vegetation condition, health and results of vegetation treatment within Teton County must be evaluated periodically and the associated risk or hazards modified as conditions change.

3.3 Teton County Weather

The wildfire season in Teton County is June through October. The highest fire danger usually occurs in July and August. Historic large fires in Teton County also have occurred during these months. It is common to have numerous consecutive days of High or Very High fire danger in Teton County. Thunderstorms ignite most of the wildfires during the high fire danger periods, and can often start several wildfires from one storm.

3.4 Teton County Topography

The mountainous terrain of Teton County contributes to the wildfire hazard. The major drainages contain extreme slopes and as much as half of the County is situated on slopes in excess of 40 percent. This terrain enhances increased rates of spread by wildfires through radiant heat, which preheats fuels uphill from a fire. The rugged topography in the County makes access to wildfire ignitions difficult and time consuming for ground wildfire suppression forces. Most human caused fires in Teton County are ignited in forested lands near residences, transportation corridors and camping areas, also along stream bottoms and on CRP lands. During high or extreme fire danger periods these ignitions can rapidly spread to several hundred acres.

3.5 Teton County Wildland/Urban Interface (WUI)

Teton County contains numerous developments that are in two of the three defined Wildland Urban Interface (WUI) categories. These categories are:

Classic Interface: An area where well-defined urban and suburban development lie adjacent to open expanses of wildland areas.

Mixed Interface: Isolated homes, subdivisions, and small communities situated predominantly in wildland settings.

Occluded Interface: Characterized by islands of wildland vegetation occurring inside largely urbanized areas.

Most Teton County subdivisions are in the **mixed interface** category, with some incorporated towns fitting the **classic interface** definition. Areas of mixed or classic interface with high risk fuel loadings, types, and condition class are rated as extreme hazards in Teton County. These areas are identified in the hazard mapping included in Appendix A.

3.6 County Vulnerability

Teton County infrastructure, homes, transportation corridors, watersheds, air quality, and other natural resources are an important part of the welfare, quality of life, visitation and beauty of the county. The county currently has over 3000 homes, a County Fire District with three departments, three major state highway transportation corridors, critical watersheds that are vulnerable to wildfire and support recreation, irrigation, and endangered species. Timber resources located on private, State and public lands are also a vulnerable resource. Teton County Fire Department and the U.S. Forest Service, BLM and IDL provide wildfire protection for all of Teton County.

County emergency services communications and computer support are critical to life and safety in Teton County. Improvement, updating and planning in these areas are necessary

for future fulfillment of emergency service response to residents, visitors, cooperators, and those traveling through the county. Communication and computer support infrastructure upgrading requirements are identified in the hazard prioritization and mitigation strategy sections.

Transportation corridors, specifically State Highways 31 and 33 are vulnerable to closure by wildfires and smoke (both temporary and long term closure). Numerous U.S. Forest Service roads are also vulnerable to closure by wildfire and have been closed because of wildfires.

4.0 HAZARD LOCATION AND DESCRIPTION

Hazards from wildfire can be found throughout Teton County. Location of WUI areas that are at high or extreme risk due to location and adjacent wildfire fuels are identified in Appendix A, Map 4. The areas identified as extreme incur high fuel loadings next to or in close proximity to developments or homes. Ingress/egress issues, signage, and creation of defensible space by homeowners are included in mitigation recommendations. County emergency services communications, updating and coordinating countywide emergency dispatch systems, and emergency equipment are defined and described within the hazard identification and mitigation sections.

Wildfire specialists, County Fire Department personnel, and Federal agencies have participated in the identification of the various hazards. Questionnaires addressing wildfire structural risk and hazard identification have been distributed and received from private home owners and various stakeholders of the county including emergency services personnel.

5.0 HAZARD POTENTIAL AND TRENDS

The interface areas within Teton County are characterized by a diverse mixture of housing structural types, development patterns, ornamental and natural vegetation and natural fuels.

In the event of a wildfire, vegetation, structures and other flammable materials can combine with unpredictable results. Reviewing past wildland/urban interface fires shows that property may be destroyed or damaged for one or more of the following reasons:

- Combustible roofing material;
- Wood construction;
- Structures with no defensible space;
- Development with poor access to structures for fire protection;
- Developments located in heavy natural fuel types;
- Structure/properties located on steep slopes covered with flammable vegetation;
- Limited water supply; and
- Winds over 30 miles per hour.